CLAIMS:

1. A semiconductor processing method, comprising:

forming an antireflective coating comprising Ge and Se over a substrate to be patterned;

forming photoresist over the antireflective coating;

exposing the photoresist to actinic radiation effective to pattern the photoresist, the antireflective coating reducing reflection of actinic radiation during the exposing than would otherwise occur under identical conditions in the absence of the antireflective coating; and

after the exposing, patterning the substrate through openings in the photoresist and the antireflective coating using the photoresist and the antireflective coating as a mask.

2. The method of claim 1 wherein the antireflective coating consists essentially of Ge and Se.

3. The method of claim 1 wherein the antireflective coating consists essentially of about 40 atomic per cent Ge and about 60 atomic percent Se.

4. The method of claim 1 wherein the antireflective coating is substantially amorphous.

5. The method of claim 1 wherein the antireflective coating comprises at least 30 atomic percent Ge.

6. The method of claim 1 wherein the antireflective coating comprises from 30 atomic percent to 50 atomic percent Ge.

7. The method of claim 1 wherein the antireflective coating comprises from 38 atomic percent to 42 atomic percent Ge.

8. The method of claim 1 wherein the photoresist contacts the antireflective coating.

9. The method of claim 1 wherein patterning the substrate comprises subtractive etching.

10. The method of claim 1 comprising after the patterning, removing substantially all the photoresist and antireflective coating layer from the substrate.

11. The method of claim 1 wherein the openings in the photoresist and the antireflective coating are formed by solvent processing of the photoresist after the exposing to form the photoresist openings, followed by dry etching of the antireflective coating through the photoresist openings.

12. The method of claim 11 wherein forming the openings in the antireflective coating comprises after said exposing, exposing the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers, and thereafter dry etching the antireflective coating in an oxygen comprising ambient.

13. A semiconductor processing method, comprising:

forming an antireflective coating comprising at least 30 atomic percent Ge and at least 50 atomic percent Se over a substrate to be patterned;

forming photoresist over the antireflective coating;

exposing the photoresist to actinic radiation effective to pattern the photoresist, the antireflective coating reducing reflection of actinic radiation during the exposing than would otherwise occur under identical conditions in the absence of the antireflective coating; and

after the exposing, patterning the substrate through openings in the photoresist and the antireflective coating using the photoresist and the antireflective coating as a mask.

14. The method of claim 13 wherein the openings in the photoresist and the antireflective coating are formed by solvent processing of the photoresist after the exposing to form the photoresist openings, followed by dry etching of the antireflective coating through the photoresist openings.

15. The method of claim 14 wherein the dry etching comprises exposure to oxygen at a temperature of at least 100°C.

16. The method of claim 14 wherein forming the openings in the antireflective coating comprises after said exposing, exposing the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers, and thereafter dry etching the antireflective coating in an oxygen comprising ambient.

17. The method of claim 16 wherein said exposing of the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers occurs prior to said solvent processing of the photoresist.

18. The method of claim 16 wherein said exposing of the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers occurs after said solvent processing of the photoresist.

19. The method of claim 14 wherein the dry etching comprises exposure to an NH_3 comprising plasma.

20. The method of claim 13 wherein the openings in the photoresist and the antireflective coating are formed by solvent processing of the photoresist after the exposing to form photoresist openings, followed by wet etching of the antireflective coating through the photoresist openings.

21. The method of claim 20 wherein the wet etching comprises exposure to an ammonium hydroxide comprising solution.

22. The method of claim 20 wherein the wet etching comprises exposure to a tetramethyl ammonium hydroxide comprising solution.

23. The method of claim 20 wherein the wet etching comprises exposure to a solution having a pH of at least 9.

24. The method of claim 13 wherein the antireflective coating consists essentially of Ge and Se.

25. The method of claim 13 wherein the antireflective coating is substantially amorphous.

26. The method of claim 13 wherein patterning the substrate comprises subtractive etching.

27. The method of claim 13 comprising after the patterning, removing substantially all the photoresist and antireflective coating layer from the substrate.

28. A semiconductor processing method, comprising:

forming a silicon nitride comprising layer over a substrate;

forming an antireflective coating comprising Ge and Se over the silicon nitride comprising layer;

forming photoresist over the antireflective coating;

exposing the photoresist to actinic radiation effective to pattern the photoresist, the antireflective coating reducing reflection of actinic radiation during the exposing than would otherwise occur under identical conditions in the absence of the antireflective coating; and

after the exposing, subtractively etching the silicon nitride comprising layer through openings in the photoresist and the antireflective coating using the photoresist and the antireflective coating as a mask.

29. The method of claim 28 comprising after the patterning, removing substantially all the photoresist and antireflective coating layer from the substrate.

30. The method of claim 28 wherein the antireflective coating consists essentially of Ge and Se.

31. The method of claim 28 wherein the antireflective coating comprises at least 30 atomic percent Ge.

32. The method of claim 28 wherein the antireflective coating comprises from 30 atomic percent to 50 atomic percent Ge.

33. The method of claim 28 wherein the antireflective coating comprises from 38 atomic percent to 42 atomic percent Ge.

34. The method of claim 28 wherein the openings in the photoresist and the antireflective coating are formed by solvent processing of the photoresist after the exposing to form the photoresist openings, followed by dry etching of the antireflective coating through the photoresist openings.

35. The method of claim 34 wherein forming the openings in the antireflective coating comprises after said exposing, exposing the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers, and thereafter dry etching the antireflective coating in an oxygen comprising ambient.

36. A semiconductor processing method, comprising:

forming an antireflective coating comprising Ge and Se over a substrate to be patterned;

forming photoresist over the antireflective coating;

exposing the photoresist to actinic radiation effective to pattern the photoresist, the antireflective coating reducing reflection of actinic radiation during the exposing than would otherwise occur under identical conditions in the absence of the antireflective coating;

after the exposing, patterning the substrate through openings in the photoresist and the antireflective coating using the photoresist and the antireflective coating as a mask; and

after patterning the substrate, chemically etching the photoresist and the antireflective coating substantially completely from the substrate using a single etching chemistry.

37. The method of claim 36 wherein the single etching chemistry is wet.

38. The method of claim 36 wherein the single etching chemistry is dry.

39. The method of claim 36 wherein the single etching chemistry is dry and comprises exposure to an oxygen plasma containing atmosphere.

40. The method of claim 36 wherein the single etching chemistry is dry and comprises exposure to an oxygen plasma containing atmosphere.

41. The method of claim 36 wherein the antireflective coating consists essentially of Ge and Se.

42. The method of claim 36 wherein the antireflective coating consists essentially of about 40 atomic per cent Ge and about 60 atomic percent Se.

43. The method of claim 36 wherein the antireflective coating is substantially amorphous.

44. The method of claim 36 wherein the antireflective coating comprises at least 30 atomic percent Ge.

45. The method of claim 36 wherein the antireflective coating comprises from 30 atomic percent to 50 atomic percent Ge.

46. The method of claim 36 wherein the antireflective coating comprises from 38 atomic percent to 42 atomic percent Ge.

47. The method of claim 36 wherein the openings in the photoresist and the antireflective coating are formed by solvent processing of the photoresist after the exposing to form the photoresist openings, followed by dry etching of the antireflective coating through the photoresist openings.

48. The method of claim 47 wherein forming the openings in the antireflective coating comprises after said exposing, exposing the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers, and thereafter dry etching the antireflective coating in an oxygen comprising ambient.